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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,586	04/16/2004	David L. Gothard	03-5296	1757

39820 7590 07/19/2006

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/826,586	Applicant(s) GOTHARD, DAVID L.	
	Examiner Thoi V. Duong	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-27 and 29 ~~is/are~~ pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-27 and 29 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 60/464,213.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Amendment filed April 17, 2006.

Accordingly, claims 16, 18, 19-21, 27 and 29 were amended, claims 1-15 and 28 were cancelled. Currently, claims 16-27 and 29 are pending in this application.

Election/Restrictions

2. Applicant's election with traverse of Species I in the reply filed on April 17, 2006 is acknowledged. The traversal is found persuasive, therefore, all the pending claims are considered in this office action.

Claim Objections

3. Claim 20 is objected to because of the following informalities: the limitation "said cover is clear polycarbonate glass" in line 3 should be --said cover is made of clear polycarbonate glass--. Appropriate correction is required.
4. Claim 21 is objected to because of the following informalities: the limitation "said cover is clear polycarbonate glass" in line 3 should be --said cover is made of clear polycarbonate glass--. Appropriate correction is required.
5. Claim 22 is objected to because of the following informalities: the limitation "said diffuser panel is polycarbonate" in line 3 should be --said diffuser panel is made of polycarbonate--. Appropriate correction is required.
6. Claim 23 is objected to because of the following informalities: the limitation "said diffuser panel is polycarbonate" in line 3 should be --said diffuser panel is made of polycarbonate--. Appropriate correction is required.

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7. Claim 24 is objected to because of the following informalities: the limitation "said diffuser panel is glass" in line 3 should be --said diffuser panel is made of glass--.

Appropriate correction is required.

8. Claim 25 is objected to because of the following informalities: the limitation "said diffuser panel is glass" in line 3 should be --said diffuser panel is made of glass--.

Appropriate correction is required.

9. Claim 26 is objected to because of the following informalities: the limitation "said diffuser panel is polycarbonate" in line 3 should be --said diffuser panel is made of polycarbonate--. Appropriate correction is required.

10. Claim 27 is objected to because of the following informalities: the limitation "said diffuser panel is glass" in line 3 should be --said diffuser panel is made of glass--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708).

Re claim 16, as shown in Fig. 3, Ochiai discloses an illumination apparatus for LCD displays comprising:

a first panel 2 (light guide plate) containing a plurality of high intensity light sources (col. 2, line 66 through col. 3, line 7 and col. 3, lines 61-67);

a diffuser panel 36 (diffusing plate) placed in front of said first panel 2 (col. 7, lines 59-67); and

a LCD display panel 40 placed in front of said diffuser panel 36 (col. 7, lines 57-67) .

Ochiai discloses an illumination apparatus for LCD that is basically the same as that recited in claim 16 except for LCD/organic display.

Onishi discloses a LCD device comprising liquid crystal materials which are organic mixtures exhibiting a liquid crystal state at room temperature and the vicinity thereof (col. 11, lines 10-29). Accordingly, the LCD device of Onishi is an LCD/organic display.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a LCD/organic display panel in the illumination apparatus of Ochiai as taught by Onishi in order to obtain a sufficient resistance against chemical reaction and regularly orient the liquid crystal domains using appropriate light irradiation conditions (i.e., chemical stability and orientation stability of liquid crystal molecules) (col. 11, lines 23-30 and 36-43).

Re claim 17, Ochiai discloses that the high intensity light sources on the first panel are LED lamps 5 (light-emitting diodes) (col. 6, lines 45-54).

13. Claims 18, 19 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US

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6,074,708) as applied to claims 16 and 17 above, and further in view of Shimada et al. (Shimada, US 6,020,867).

Re claims 18 and 19, the illumination apparatus for LCD/organic displays of Ochiai as modified in view of Onishi above includes all that is recited in claims 18 and 19 except for a cover placed in front of said LCD/organic display panel.

As shown in Fig. 148, Shimada discloses a LCD apparatus comprising a backlight unit 530, a diffuser panel 239 (diffusion plate), a LCD panel P, and a cover 242 (face plate) placed in front of the LCD panel P to protect the LCD panel P (col. 11, lines 4-11 and col. 61, line 59 through col. 62, line 20).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Shimada by forming a cover placed in front of said LCD/organic display panel in order to protect the LCD panel from intrusion of dirt onto the surface of the LCD panel (col. 11, lines 8-11 and col. 62, lines 12-20).

Re claims 22-27, as shown in Figs. 89 and 90, Shimada also discloses that the diffuser panel 239 disposed in front of the backlight unit 530 may be formed of a transparent member such as polycarbonate or glass in order to provide a large area planar distribution showing a high luminance and a good viewing angle characteristic (col. 37, line 52 through col. 38, line 5; and col. 38, lines 29-32).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for

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LCD/organic displays of Ochiai by employing the diffuser formed of polycarbonate or glass as taught by Shimada in order to realize a high luminance and a good viewing angle characteristic for the display (col. 38, lines 29-32).

14. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708) and Shimada et al. (Shimada, US 6,020,867) as applied to claims 18, 19 and 22-27 above, and further in view of Holmes (US 4,243,719).

Shimada discloses that the cover 242 is made of a reinforced glass (col. 19, lines 13-17); however Shimada does not disclose that the reinforced glass of the cover is clear (transparent) polycarbonate glass as recited in claims 20 and 21.

As shown in Fig. 4, Holmes discloses a process for forming a reinforced glass laminate comprised polycarbonate (clear polycarbonate glass), which is useful as an impact and scratch resistant display screen for a display using LEDs (col. 14, lines 14-31).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Holmes by having a cover made of clear polycarbonate glass in order to obtain an excellent transparency and impact resistance as well as a good resistance to surface damage by external agents (col. 1, lines 4-9 and col. 14, lines 25-31).

15. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai (US 6,196,691 B1) in view of Onishi et al. (Onishi, US 6,074,708) as applied to claims

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16 and 17 above, and further in view of Nishio et al. (Nishio, US 5,592,332) and Chen (US 5,825,553).

The illumination apparatus for LCD/organic displays of Ochiai as modified in view of Onishi above includes all that is recited in claim 29 except for a Frenzel lens panel placed between the first panel and the diffuser panel.

At first, as shown in Figs. 8, 10 and 20, Nishio discloses a surface light source 40 comprising a first panel comprising a light guide plate 42 and light sources 43, a diffuser panel 20 (light isotopic diffusing layer), and a lenticular lens 10 placed between the first panel and the diffuser panel 20 (col. 11, lines 13-29), wherein, as shown in Figs. 40A and 41A, the lenticular lens is formed such that the spherical aberration of the lenticular lens is removed and the light collecting loss is minimized (col. 21, lines 19-35).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for LCD/organic displays of Ochiai with the teaching of Nishio by using the lenticular lens panel to minimize spherical aberration and hence, the light collecting loss (col. 21, lines 19-35).

Further, as shown in Fig. 2, Chen discloses an optical system comprising a refractive lens 16 using a Frenzel lens on the surface of the lens or as a stand alone element so as to further reduce chromatic aberration (col. 3, lines 57-64).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for

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LCD/organic displays of Ochiai with the teaching of Chen by using an additional Frenzel lens panel in order to further reduce the chromatic aberration (col. 3, lines 60-64).

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong

07/02/2006

A handwritten signature in black ink, appearing to read 'Thoi V. Duong', written in a cursive style.